

# The Pacific Seahorse, *Hippocampus ingens* (Girard, 1858) (Syngnathiformes, Syngnathidae): a geographic range expansion of a poorly known species in Chile

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**Abstract.** Two specimens of Pacific Seahorse, *Hippocampus ingens* Girard, 1858, were captured as a bycatch in trawl fishing off the Chañaral coast, in the Atacama region of northern Chile. This finding expands its known distribution area in Chilean coastal territory by 114 km to the south, highlighting the importance of documenting its geographical range and the need for further research and sampling to gain a better understanding of the population in the area.

**Key words.** Atacama region, Hipocampo, Chañaral, Chilean coast

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## INTRODUCTION

Syngnathid fish, are distributed globally, with almost one-fifth of the species reported from the Indo-West Pacific (Koning and Hoeksema 2021). Coral reefs and seagrass beds support the greatest number of syngnathid species on a per unit area basis in both the eastern and western Pacific (Ngisiange et al. 2024). Syngnathids are divided into unique biogeographical entities in the tropics, subtropics, and warm temperate waters in the Indo-Pacific region (Claassens et al. 2022), with high species richness occurring on both sides of the Indo-West Pacific barrier in the western Pacific region. On the other hand, species richness is typically reduced in eastern Indo-Pacific region and South Atlantic Ocean.

The genus *Hippocampus* Rafinesque, 1810, which is commonly known as seahorses, includes 41 described species (Lourie et al. 2016), and it is widely distributed around the world (Piacentino and Luzzatto 2004). The species, of this genus, are characterized by being sensitive to environmental changes, exhibiting low mobility, and strong monogamy (Bell et al. 2003; Foster and Vincent 2004). All species are listed in CITES due to their high risk of extinction, resulting from intense pressure exerted by capture and habitat destruction on wild populations (Vite-García et al. 2017). Therefore, there is currently significant interest in their breeding, maintenance, and reproduction in captivity (Ortega-Salas and Reyes-Bustamante 2006).

*Hippocampus ingens* Girard, 1858 has a natural geographic distribution from San Diego, USA, to Pucusana, Peru, including the Galapagos Islands (Chirichigno 1974; Lourie et al. 2004). Additionally, documented records exist from the 1982–83 El Niño event (Medina et al. 2004; Sielfeld et al. 2010) in the following locations: Tocopilla, Antofagasta region, in 1983 (Kong et al. 1985); Iquique, Tarapacá region. Two additional records were also made in 1998 (Kong et al. 1999); and Antofagasta, Antofagasta region, in 1998 and 1999 (Kong et al. 2002). Subsequently, Méndez-Abarca (2015) captured a specimen measuring 22.3 cm in the Playa Cifuncho area, Taltal commune, Antofagasta Region, Chile.

We document the incidental capture of two specimens of *H. ingens* on a semi-rocky beach off the coast of the city of Chañaral, Atacama region, Chile. The specimens were caught as bycatch in a trawl net in January 2017, during a non-ENSO year. The incursion into Chilean waters has also been described for other tropical species, such as Northern Barracuda, *Sphyrna ensis* (Jordan & Gilbert, 1882) (Méndez-Abarca et al. 2024). Our record extends the known geographic distribution of the species and provides additional information.



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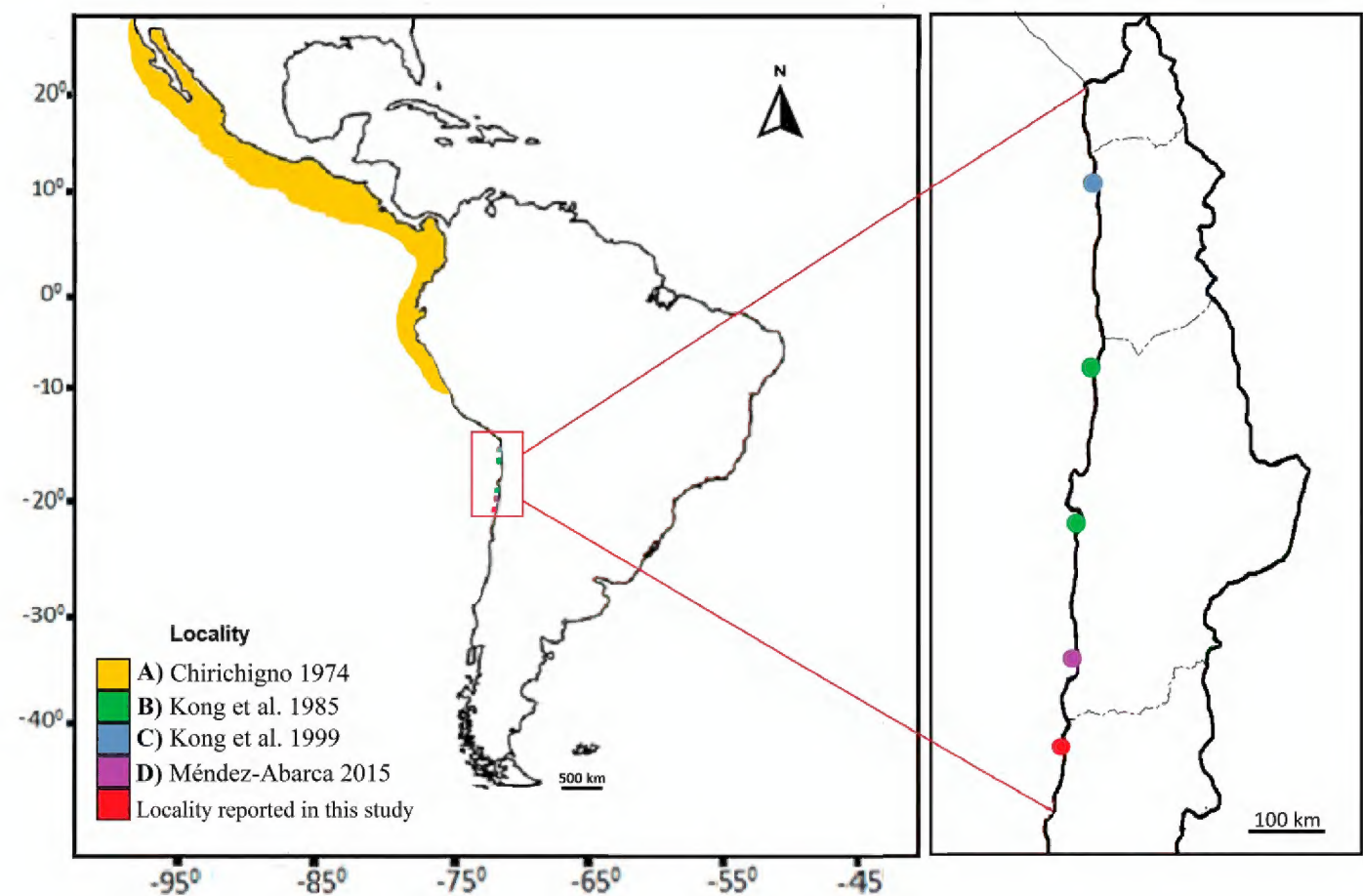
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**Figure 1.** Distribution of *Hippocampus ingens* along the Pacific coast of South America showing natural distribution and the new records of the species. Sources: A = Chirichigno (1974). B = Kong et al. (1985). C = Kong et al. (1999). D = Méndez-Abarca (2015). E = New record from Chañaral, Chile.



## METHODS

On January 22, 2017, two specimens of *Hippocampus ingens* were incidentally captured in the coastal area of Chañaral, Atacama region, Chile, in a trawl net with 2 cm diamond-mesh. The trawl nets were operated at a depth of 4 m (Figure 1). The captured specimen was dehydrated in an oven, for preservation purposes, and photographed. The specimens were deposited in the marine fish collections of the Wildlife Museum of the Reino Animal Foundation (RAF) in Arica, Chile. The identification of the specimen was based on meristic and morphometric characters (Table 1) as described by De la Cruz-Agüero et al. (1997) and Lourie et al. (2004).

## RESULTS

### *Hippocampus ingens* Girard, 1858

Figure 2

**New records.** CHILE – ATACAMA REGION • Chañaral sector; 26°20'52"S, 070°27'31"W; 4 m depth; 22.I.2017; F. Méndez-Abarca leg.; trawl net bycatch; 1 ♂ adult and 1 sex undetermined, juvenile, COLECIC0164-5FRA.

**Identification.** Adult specimen body length of 185 mm. Juvenile specimen 110 mm body length.

Body elongated in a horizontal position, associated with a series of bony rings (11 on the trunk and 39 on the tail). Head robust, horse-head-like in shape, covered by spines. Mouth tubular. Lateral fins on both

**Table 1.** Morphometric data of the two specimens of *Hippocampus ingens* collected from the coastal zone of Chañaral city, Atacama Region, Chile.

Segment	Juvenile stage (mm)	Adult stage (mm)
Head Length (HL)	24.7	42.5
Trunk Length (TrL)	22.1	41.5
Tail Length (TaL)	63.8	101.1
Dorsal fin Length (DL)	2.87	4.66
Coronet Height (CH)	5.93	11.8
Snout Length (SnL)	10.6	20.3
Snout Height (SH)	1.91	5.00
Orbital Diameter (OD)	2.24	2.88
Post Orbital (PO)	1.00	1.69
HH	13.1	22.0
Total Length (TL)	110	185





**Figure 2.** *Hippocampus ingens* collected in Chañaral, Chile. **A.** Adult. **B.** Juvenile specimens. Scale bar = 25 mm.

sides of the head. Small dorsal fin present. Caudal fin absent. Pectoral and dorsal fins with 16 rays, and 18 rays respectively. Caudal fin absent, a prehensile tail that helps to anchor the body to the substrate, present instead. Head with a medium-sized tuft crown, leaning backward, on the top. A prominent spine present on the cheek area and above the eyes. Coloration grayish-yellow at the time of capture, kept by the adult specimen after dehydration. Juvenile specimen coloration changed to a yellowish. Observed characters consistent with the description of De la Cruz-Agüero et al. (1997); Lourie et al. (2004); Méndez-Abarca and Pepe-Victoriano (2020).

## DISCUSSION

The known geographic distribution of *Hippocampus ingens* extends from San Diego, USA, to Pucusana, Peru, and includes the Galapagos Islands (Chirichigno 1974; Lourie et al. 2004). Its presence has been documented since the 1982/83 El Niño event (Medina et al. 2004; Sielfeld et al. 2010), with records in Tocopilla, Antofagasta region, in 1983 (Kong et al. 1985); in Iquique, Tarapacá region, in 1998 (Kong et al. 1999); and in Antofagasta, Antofagasta region, in 1998 and 1999 (Kong et al. 2002). Subsequently, Méndez-Abarca (2015) captured a specimen of 223 mm in the Playa Cifuncho sector, Taltal commune, Antofagasta Region. Both specimens reported in this study were remarkably smaller than the maximum length of 300–310 mm recorded for the species (Méndez-Abarca and Pepe-Victoriano 2020; Lourie et al. 2004). Also, the discovery of this species off the coast of Chañaral, in the Atacama region, extends its known distribution by approximately 114 km. Furthermore, our report is 7 years old, with specimens recovered from a private collection. Until now, and to our knowledge, no other official record of the species in this area of northern Chile has been reported. This low frequency of observation is likely due to the lack of sampling effort, indicating that additional sampling in this region is required to confirm the exact extent of the species' distribution.



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## ADDITIONAL INFORMATION

### Conflict of interest

The authors declare that no competing interests exist.

### Ethical statement

No ethical statement is reported.

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### Author contributions

Conceptualization: FMA. Writing – original draft: FMA. Writing – review and editing: FMA, RPV, EAM. Investigation: FMA. Resources: FMA. Visualization: EAM.

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### Data availability

All data that support the findings of this study are available in the main text.

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